

## Patent Claims

1. Partial fragmentation projectile in the form of a  
5 jacketed projectile with a soft core as the  
fragmenting part of the projectile and a hard core as  
the penetrator, characterised in that the penetrator  
(3), seen in the direction of the trajectory of the  
projectile (1), is arranged in front of the soft core,  
10 the projectile core (4).
2. Partial fragmentation projectile according to claim 1,  
characterised in that the shaping of the rear (11) of  
the penetrator (3) and the shaping of the nose (13) of  
15 the projectile core (4) are harmonised with the  
fragmentation characteristics required for the  
projectile core (4), depending on the calibre and  
impact speed and the nature of the quarry.
- 20 3. Partial fragmentation projectile according to claim 1  
or 2, characterised in that the nose (13) of the  
projectile core (4) has a recess (14, 30, 32, 34)  
which is arranged centred on the midline (19) of the  
projectile (1).
- 25 4. Partial fragmentation projectile according to claim 3,  
characterised in that the recess (14, 30, 32, 34) is  
conical (14, 30), depression-shaped (32) or bell-  
shaped (34).
- 30 5. Partial fragmentation projectile according to claim 4,  
characterised in that the tip angle (35) of the  
conical recess (14, 30) is between 30° and 90°.

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6. Partial fragmentation projectile according to one of claims 3 to 5, characterised in that a cavity (15) adjoins the recess (14), which is arranged centred on the midline (19) of the projectile (1).
- 5 7. Partial fragmentation projectile according to claim 6, characterised in that the cavity (15) extends inwards for not more than  $\frac{1}{4}$  of the length of the projectile core (4).
- 10 8. Partial fragmentation projectile according to one of claims 3 to 7, characterised in that the recess (30) is surrounded by a circular annular surface (28) and that this circular annular surface (28) is
- 15 perpendicular (37) to the midline (19) of the projectile (1).
9. Partial fragmentation projectile according to one of claims 1 to 8, characterised in that the shape of the
- 20 rear (11, 27, 31, 33) of the penetrator (3) is matched to the respective shape of the recess (14, 30, 32, 34) of the projectile core (4).
10. Partial fragmentation projectile according to claim 9,
- 25 characterised in that the rear (27) of the penetrator (3), matched to the nose (13) of the projectile core (4) is surrounded by a circular annular surface (28) and that this circular annular surface (28) is
- 30 perpendicular (37) to the midline (19) of the projectile (1).
11. Partial fragmentation projectile according to one of claims 1 to 10, characterised in that the nose (7) of the penetrator (3) has a shape matched to the

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deformation and fragmentation behaviour required from the penetrator (3).

12. Partial fragmentation projectile according to claim  
5 11, characterised in that the nose (7) of the penetrator (3) is designed as a flat head (25) or with a hole at the tip (8, 9; 26).
13. Partial fragmentation projectile according to one of  
10 claims 1 to 12, characterised in that the tip (21) of the projectile (1) has a shape matched to the flight characteristics required.
14. Partial fragmentation projectile according to claim  
15 13, characterised in that the projectile (1) has a projectile cover in the form of a cap (22).
15. Partial fragmentation projectile according to claim  
20 13, characterised in that the projectile (1) has a solid tip (23) placed on it.
16. Partial fragmentation projectile according to claim  
25 15, characterised in that the solid tip (23) has a shaft (24) on the rear side which extends into the penetrator (3).
17. Partial fragmentation projectile according to claim 15  
or 16, characterised in that the tip (23) of the projectile consists of a biodegradable plastic.
- 30 18. Partial fragmentation projectile according to one of claims 1 to 17, characterised in that the projectile (1) has a sharp edge (16).

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19. Partial fragmentation projectile according to claim 18, characterised in that the sharp edge (16) is formed by a crimping (17) in the jacket (2) of the projectile (1) at the transition point between the penetrator (3) and the projectile core (4).
20. Partial fragmentation projectile according to one of claims 1 to 19, characterised in that the wall thickness of the jacket (2) of the projectile (1) decreases from the rear (20) of the projectile (1) to the sharp edge (18).
21. Partial fragmentation projectile according to one of claims 1 to 20, characterised in that the wall thickness of the projectile jacket (2) in the narrowing part (10) of the projectile (1) is less than in the cylindrical part (12).
22. Partial fragmentation projectile according to one of claims 1 to 21, characterised in that the projectile (1), consisting of jacket (2), penetrator (3), projectile core (4) and optionally a projectile tip (21) on the top, consists of lead-free materials.
23. Partial fragmentation projectile according to claim 22, characterised in that the following materials in particular are used for the projectile (1): plastics, particularly biodegradable ones, synthetic resins, and, as metallic materials, copper, tin, zinc, iron, tungsten, silver, aluminium, tantalum, vanadium as well as possible alloys of these metals.

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